APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,950	07/03/2003	Alexis Tzannes	5550-31	5413

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EXAMINER
ROSARIO, DENNIS

ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
10/07/2009	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<table>
<tr><td rowspan="2">Office Action Summary</td><td>Application No.</td><td>Applicant(s)</td></tr>
<tr><td>10/611,950</td><td>TZANNES ET AL.</td></tr>
<tr><td></td><td>Examiner</td><td>Art Unit</td></tr>
<tr><td></td><td>DENNIS ROSARIO</td><td>2624</td></tr>
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-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 June 2009*.

2a)☒ This action is FINAL.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-91* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-91* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Response to Amendment

1.   The amendment was received on 6/15/09. Claims 1-91 are pending.

Claim Rejections - 35 USC § 101

2.   Due to the amendment the 35 USC 101 rejection is withdrawn.

Response to Arguments

3.   Applicant's arguments filed 6/15/09 have been considered but they are not

persuasive.

        Applicants state that the cited art does not teach the claimed 2-dimensional

wavelet transform.

        The examiner respectfully disagrees, since Hou teaches the claimed 2-

dimensional wavelet transform by teaching a "new MLT…[that]…encapsulates…the

wavelet transforms" in col. 7, lines 30-37. Thus, the new MLT reasonable contains a

wavelet transform to effectively produce the MLT and wavelet transforms. More

specifically, Hou teaches in col. 9, lines 24-33 that the "MLT is a transform having a

modulation function" in ibid where such function is renamed as "input data

multiplication" in ibid wherein such "examples" in ibid are provided of which is the

"wavelet…transform" in ibid. Thus, the new MLT is a transform of itself having the

wavelet transform which is another transform. Thus, the 103(a) rejection is maintained.

        Applicants state that the MLT is not a wavelet transform. The examiner

respectfully disagrees in light of the above paragraph. An MLT in general may not be a

wavelet transform, but Hou's new MLT is the wavelet transform, because Hou uses the

wavelet with the MLT.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1-5,8,12-14,17-24,26,30-32,35-41,44,48-50,53-59,62,66-68,71-77,80,84-

86 and 89-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lubin et

al. (US Patent 6,075,884) in view of Hou (US Patent 5,859,788).

Regarding claim 19, Lubin teaches an image compression method

comprising:

a)   receiving, by a compression module (fig. 1:110), a first image (fig. 7:
ORIGINAL VIDEO), that has been decomposed into N subbands using a 2-dimensional
wavelet transform (not disclosed in Lubin), in a sequence of images and

b)   compressing (fig. 7:ENCODED BITSTREAM) the image at least based on
one or more parameters (fig. 7:ENCODER PARAMETERS); and

c)   iteratively adapting ("iterative…adaptation" in col. 9, lines 1-3 via figures 7
and 8) the one or more parameters ("parameters" in col. 9, lines 1-3) used on the first
image (fig. 7:ORIGINAL VIDEO) for compression (via figs. 4-6) of a next image (fig.
4:ORIGINAL VIDEO), wherein the one or more parameters include at least one
truncation parameter (given that the parameters are used to "reduce…error" in col. 9,
lines 1-3).

Lubin does not teach the wavelet limitation, but teaches using "transform coeffi-
cients" in col. 7, lines 4-7 and in col. 9, lines 39-43 with respect to fig. 9.

Hou teaches that "transformed data is referred to as coefficients" in col. 2, lines
24-28 where the transformed data is from a modulated lapped transform in the title of
Hou and the limitation of decomposed (implied) into N subbands (or "five band subset"
in col. 23, lines 29-35 as shown in fig. 13 that shows five blocks of 4X4 smaller block
dimensions) using a 2-dimensional wavelet transform (or "MLT…similar to wavelet
transforms" in col. 23, lines 29-35 where MLT is 2D as shown in fig. 13:2-D and
"encapsulates…wavelet transforms" in col. 7, lines 30-37).

It would have been obvious at the time the invention was made to one of ordinary
skill in the art to modify Lubin's transform coefficients with Hou's transform coefficients,

because Hou teaching is "superior to DCT…[and]…ordinary subband filters" in col. 23,

lines 29-35.

Claims 20 and 21 are rejected the same as claim 19b). Thus, argument similar to

that presented above for claim 19b) is equally applicable to claims 20 and 21.

Regarding claim 22, Lubin discloses the method of claim 21, wherein the metric

is at least based on one of image file size and image quality (since figure 4 is called

QME which stands for quality-metric-based encoding.).

Regarding claim 23, Lubin discloses the method of claim 22, wherein the metric

governing image quality is based on one or more of:

a)   peak signal to noise ratio,

b)   mean squared error,

c)   human visual system models and

d)   operator inspection (or "human viewer" in col. 7, line 34).

A rejection of claim 24 is moot based on the "one of" limitation in claim 22.

Regarding claim 26 Lubin discloses the method of claim 21, wherein the metric is

based on a difference (or "differences" in col. 5, line 20) between a target image quality

("predicted ratings" in col. 5, line 20) and an achieved image quality ("ratings observed"

in col. 5, line 20 where said ratings includes "quality levels" in col. 5, line 24) .

Regarding claim 30, Lubin discloses the method of claim 19, wherein the first

image and the next image are one or more of:

a)   a sequence of images (or ORIGINAL VIDEO as shown in fig. 4),

b)   time-series data, and

     c)   3-dimensional data sets.

Regarding claim 31, Lubin discloses the method of claim 19, further comprising:

     a)   iteratively ("iterations" in col. 7, line 44) controlling the one or more

           parameters.

     Claim 32 is rejected the same as claim 31. Thus, argument similar to that
presented above for claim 31 is equally applicable to claim 32.

     Regarding claim 35, Lubin discloses the method of claim 19, further comprising:

     a)   selecting a quantization ("selection of a quantization" in col. 9, line 52).

     Claims 1-5,8,12-14,17,18 are rejected the same as claims 19-23,26,30-32 and
35,19. Thus, argument similar to that presented above for claims 19-23,26,30-32 and
35,19 of a method is equally applicable to claims 1-5,8,12-14,17,18 of a system.

     Claims 36-41,44,48-50,53,54 are rejected the same as claims 19,19-23,26,30-32
and 35,19. Thus, argument similar to that presented above for claims 19,19-23,26,30-32
and 35,19 of a system is equally applicable to claims 36-41,44,48-50,53,54 of a system.

     Claims 55-59,62,66-68,71-72 are rejected the same as claims 19-23,26,30-32
and 35,19. Thus, argument similar to that presented above for claims 19-23,26,30-32
and 35,19 of a system is equally applicable to claims 55-59,62,66-68,71-72 of a
protocol.

     Claims 73-77,80,84-86,89,90,91 are rejected the same as claims 19-23,26,30-32
and 35,19,19. Thus, argument similar to that presented above for claims 19-23,26,30-32
and 35,19,19 of a system is equally applicable to claims 73-77,80,84-86,89,90,91 of a
media.

6.   Claims 1,7,9,-11,15,16,18,19,21,25,27-29,33,34,36,37,43,45-47, 51, 52, 54, 55,

57,61,63-65,69,70,72,73,75,79,81-83,87,88,90 and 91 are rejected under 35 U.S.C.

103(a) as being unpatentable over Mukherjee (US Patent 7,003,167 B2) in view of Hou

(US Patent 5,859,788).

Regarding claim 19, Mukherjee teaches an image compression method

comprising:

a)   receiving, by a compression module(fig. 1:11), a first image (fig. 1:98), that

has been decomposed into N subbands using a 2-dimensional wavelet

transform, in a sequence of images ("series of blocks" in col. 4, lines 25-

27) and

b)   compressing the image (fig. 1:11) at least based on one or more

parameters (fig. 1:13:RAW or BTC-VQ or n-COLOR); and

c)   iteratively adapting (via "adaptive image compression" in col. 3, line 50)

the one or more parameters (fig. 1:13:RAW or BTC-VQ or n-COLOR)

used on the first image (fig. 1:98) for compression of a next image (given

that the adaptive image compression operates using said RAW or BTC-

VQ or n-COLOR on a "block by block" in col. 3, lines 50-53 basis, the

adaptive compression finishes processing of a current block for

processing another block that is waiting to be processed), wherein the one

or more parameters (said RAW or BTC-VQ or n-COLOR) include at least

one truncation parameter (said RAW includes " 'truncated raw' " in col. 3,

lines 25-29).

Mukherjee teaches away wavelets, because the wavelets have a penalty in compression environments.

Hou has recognized in col. 3, lines 43-65 the same problem of wavelets in the environment of compression of Mukherjee and provides a solution: "Modulated Lapped Transform" in col. 3, lines 53,54 and the limitation of decomposed into N subbands using a 2-dimensional wavelet transform as discussed in the rejection of claim 19 in Lubin.

It would have been obvious at the time the invention was made to one of ordinary skill in the art to modify Mukherjee's teaching of wavelets with Hou's wavelets for the same reason as in the rejection of claim 19, above.

Regarding claim 21, Mukherjee discloses the method of claim 19, wherein the compression parameter module adapts the one or more parameters based on a metric (or "in-progress measure" in col. 2, line 56).

Regarding claim 25, Mukherjee discloses the method of claim 21, wherein the metric is based on a difference between a target image file size and an achieved image file size ("difference between the determined com-pressed block size and the target block size" in col. 5, lines 64,65.

Regarding claim 27, Mukherjee discloses the method of claim 19, wherein the one or more parameters includes one or more:

a)   quantization parameters (or "BTC-VQ" in col. 4, line 40 that is a function of truncation and quantization).

Claims 28,29,33 and 34 are rejected the same as claim 27b). Thus, argument similar to that presented above for claim 27b) is equally applicable to claims 28,29,33 and 34.

Claim 36 is rejected the same as claim 19. Thus, argument similar to that presented above for claim 19 is equally applicable to claim 36.

Claims 1,7,9-11,15,16,18 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 1,7,9-11,15,16,18 of a method.

Claims 37,39,43,45-47,51,52,54 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 37,39,43,45-47,51,52,54 of a system.

Claims 55,57,61,63-65,69,70,72 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 55,57,61,63-65,69,70,72 of a protocol.

Claims 73,75,79,81-83,87,88,90,91 are rejected the same as claims 19,25,27-29,33,34,19. Thus, argument similar to that presented above for claims 19,25,27-29,33,34,19 of a system is equally applicable to claims 73,75,79,81-83,87,88,90,91 of a media.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to
applicant's disclosure.

        Persiantsev et al. (US Patent 6,307,971 B1) is pertinent as teaching a method of
a "self-adaptive iterative cycle" in the abstract, last sentence with "truncated" in col. 16,
lines 54-58 data and wavelets as shown in figures 7-10 and is applicable under 102(e)
rejection of claim 1.

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time
policy as set forth in 37 CFR 1.136(a).

        A shortened statutory period for reply to this final action is set to expire THREE
MONTHS from the mailing date of this action. In the event a first reply is filed within
TWO MONTHS of the mailing date of this final action and the advisory action is not
mailed until after the end of the THREE-MONTH shortened statutory period, then the
shortened statutory period will expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of
the advisory action. In no event, however, will the statutory period for reply expire later
than SIX MONTHS from the mailing date of this final action.

        Any inquiry concerning this communication or earlier communications from the
examiner should be directed to DENNIS ROSARIO whose telephone number is
(571)272-7397. The examiner can normally be reached on 9-5PM.

        If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Matthew Bella can be reached on (571)272-7778. The fax phone number
for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/   Dennis Rosario
Supervisory Patent Examiner, Art Unit 2624   Examiner
                                                           Art Unit 2624